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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,574	12/19/2001	Jack Brass	16224.00046	1008

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EXAMINER

BARTH, VINCENT P

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/021,574		BRASS, JACK	
	<b>Examiner</b>		<b>Art Unit</b>	
	Vincent P. Barth		2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>0204,0903,0703</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kalley, et al., U.S. Pat. No. 6,590,220 (8 Jul. 2003), in view of Applicant's admissions of prior art.

3. Referring to Claim 35, Kalley discloses that a lamp in the form of a flashlight may be used to detect leaks in, *inter alia*, fluid systems, such as air conditioning units (col. 1, ln. 15; col. 1, ln. 22; col. 1, lns. 45-62). Kalley discloses that the lighting source should be in the form of LED's, which may emit in the UV range (i.e. below 400 nm), as well as in the visible range (i.e. 400 to 500 nm) (see col. 1, lns. 50-52; col. 2, lns. 3-5; col. 4, lns. 28-30; col. 4, lns. 54-56). Therefore, Kalley explicitly provides for particular narrow bandwidths *within* the broader illustrative ranges in the visible and UV spectra. Accordingly, Applicant has claimed a particular range of 395-415 nm, however, such range falls within the range already set forth in Kalley. See MPEP §2144.05, (In the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a prima facie case of obviousness exists), citing In re Wertheim, 541 F.2d 257, 191USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed.Cir. 1990). Concerning the spectral range, it should also be emphasized that particular

Art Unit: 2877

fluorescent dyes may require a particular spectral range. Therefore, those practicing the Kalley invention would likely expect that the spectral output of the lighting device (and thus the particular LED's) would be selected depending on which dye is present, and would thus be somewhat variable. Note also, that although Kalley discloses embodiments in which filters are used in connection with the generation of light of the desired wavelength to fluoresce leak detection fluids, Kalley also explicitly discloses that the LED's may be selected to have a narrow spectral output, so as to avoid the need for filters (col. 4, lns. 54-56; col. 8, lns. 13-33). Kalley discloses that the LED's can be of a type in which the angle light emitted forms an angle of +/- 35 degrees, or less, as is desirable by those practicing the invention (col. 8, lns. 33-41). See MPEP §2144.05, (In the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a prima facie case of obviousness exists), citing In re Wertheim, 541 F.2d 257, 191USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed.Cir. 1990). Moreover, Applicants do not disclose that the particular range provides a new and unexpected result over the prior art, thus the range claimed is a non-critical limitation. The MPEP §2144.05(III) states that, "the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP §716.02 - §716.02(g) for a discussion of criticality and unexpected results. Accordingly, the modification claimed over the prior art would have been obvious to those skilled in the art at the time of the invention. Continuing now with the discussion of the Kalley reference, Kalley discloses that the LED's may be a single LED, or an array (col. 8, ln. 54). Kalley discloses that the device comprises a housing (Fig. 7), and that the open end has at least one LED disposed such that the

Art Unit: 2877

light emits outward. Kalley discloses that the LED's may be a single LED, or an array (col. 8, ln. 54), without limitation as the number of LED's. Therefore, those practicing the Kalley invention would expect to have additional LED's numbering at least 20, as might be necessary to cause the particular fluorescent dye to fluoresce. See MPEP §2144.04(VI)(B), citing, In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (mere duplication of parts has no patentable significance unless a new and unexpected result is produced.). Kalley illustrates that the lighting elements direct light directly out of the unit, without reflecting on the lighting elements, such as the LED's (Fig. 7). Kalley illustrates that the flashlight may be in the form of a handheld/untethered unit (Fig. 7). Although the Kalley reference discloses an array of LED's, the reference does not explicitly disclose that the cluster of LED's draws a total power of 7.2 Watts. However, the Kalley reference discloses that the array may be preferably 4-16 commercially available UV LED's (col. 8, ln. 33), such as those available from American Opto Plus LED's or Kwality Electronics. The instant Specification suggests Nichia Corporation as a source for LED's (Specification, pg. 14), and wherein Applicant admits that such LED's are known to draw 0.2 Watts of power. Accordingly, since the Kalley reference explicitly suggests at least a plurality of LED's, generally in the range of 4-20, the total power consumption for the Kalley device using Nichia LED's would be less than 7.2 Watt. Therefore, the limitation would have been obvious to those of skill in the art at the time of the invention, in view of Applicant's admissions of prior art. Although the Kalley reference discloses an array of LED's, the reference does not explicitly disclose that the cluster of LED's is less than 2 inches in diameter. The instant Specification suggests that as many as 36 Nichia LED's may be used in such a configuration (Specification, pg. 14), thus the diameter of each Nichia LED would be

approximately 3 to 5 mm. The Kalley reference discloses that the array may be 4-20 commercially available UV LED's (col. 8, ln. 33), such as those available from American Opto Plus LED's or Kwalit Electronics. Such LED's are merely exemplary of those commercially available, and those practicing the invention would understand the disclosure to permit the inclusion of other commercially available LED's. Therefore, substituting another commercially available configuration of 20 Nichia LED's would result in a diameter of approximately 2 inches. Therefore, the limitation would have been obvious to those of skill in the art at the time of the invention, in view of Applicant's admissions of prior art.

#### *Comments*

4. Applicant has argued in the Remarks to the Amendment dated 5 November 2004 that the instant invention (i) has unexpected results over the Kalley reference, and (ii) that the Kalley reference teaches away from the instant invention. The Examiner sincerely appreciates the efforts made by Applicant and Counsel in this regard, however, having carefully considered the arguments and demonstrative evidence presented, such arguments of unexpected results and teaching away has not been sufficient to overcome the Kalley reference.

Regarding the issue of unexpected results, Applicant has argued that the spectral output range from the LED's chosen in the instant invention is, "chosen not to match the peak wavelength at which the dye reacts, rather it is chosen because the wavelength provides acceptable reemitted radiation from the dye, while limiting the detrimental effects of reflected visible incident light" (Remarks, pg. 6, last para. to pg. 7, first para.). However, Applicant has not provided spectral excitation data to indicate the particular spectral excitation profile of the

Art Unit: 2877

particular dye used in the demonstration provided on 29 October 2003, nor has a spectral irradiance profile of the particular LED used during the demonstration provided. In the absence of any spectral data, Applicant is referred to, for example, Cooper, et al., U.S. Pat. No. 6,165,384 (26 Dec. 2000), which discusses fluorescent dyes used in leak detection, including naphthalimide dyes which are commonly used in air conditioning leak detection (col. 2, lns. 62-64). Figure 5 of the Cooper reference illustrates the excitation profile of naphthalimide dye, wherein the excitation peak appears at approximately 410 nm, and with a range of about 375 nm to 440 nm for higher luminance. Since the peak in a commonly used A/C dye (naphthalimide) appears at about 410 nm, those designing an LED to have peak excitation of such a dye for A/C leak detection would be expected to select an LED with approximately a peak irradiance in this range. Therefore, the selection of an LED, as in the instant invention, with a bandwidth in the range of about 390nm to 415 nm appears to be an expected choice for A/C leak detection using naphthalimide. Moreover, since 410 nm is also in the visible range allowing navigation, such result in the context of irradiating naphthalimide is not unexpected. Accordingly, the argument made by Applicant in the Remarks dated 5 November 2004 that the LED output range is not chosen to match the peak wavelength at which the dye reacts is not consistent with data otherwise known in the art, and Applicant has not provided spectral data to refute such assertions.

Regarding Applicant's arguments that the Kalley reference teaches away from LED's in the spectral range chosen is similarly not supported by data otherwise known in the art, since those practicing the Kalley reference in the context of A/C leaks would chose a bandwidth range to match the excitation parameters of dyes commonly used.

Accordingly, the secondary evidence has not been sufficient to overcome the Kalley reference.

5. Applicant's amendment to the Specification dated 5 Nov. 2004 does not introduce new matter since said amendment merely notes a priority date, and has thus been entered into the file without objection.

6. The following references are of interest: Cooper, et al., U.S. PG-Pub. No. 2003/0007345 (9 Jan. 2003); Cooper, et al., U.S. PG-Pub. No. 2003/0007346 (9 Jan. 2003); Cooper, et al., U.S. PG-Pub. No. 2003/0142489 (31 Jul. 2003); Belliveau, U.S. Pat. No. 6,357,893 (19 Mar. 2002) (see Figure 11B).

7. Upon reviewing the documents scanned into the Image File Wrapper (IFW) system of the instant Application, it appears that three pages of Information Disclosure Statements (IDS's) have not been scanned into said IFW system. Accordingly, the references contained in these three pages of IDS's previously submitted by Applicant have been reviewed again by the Examiner, initialed, signed, and are enclosed herewith to ensure that the IFW file is complete. Note that on IDS dated 28 July 2003 the reference identified by Applicant as Reiff, et al., PG Pub. No. 2002/019396 (19 Dec. 2002) contains a minor typographical error, in which one digit was omitted, and wherein the correct PG Pub. No. 2002/0191396 has been noted on the IDS by the Examiner.

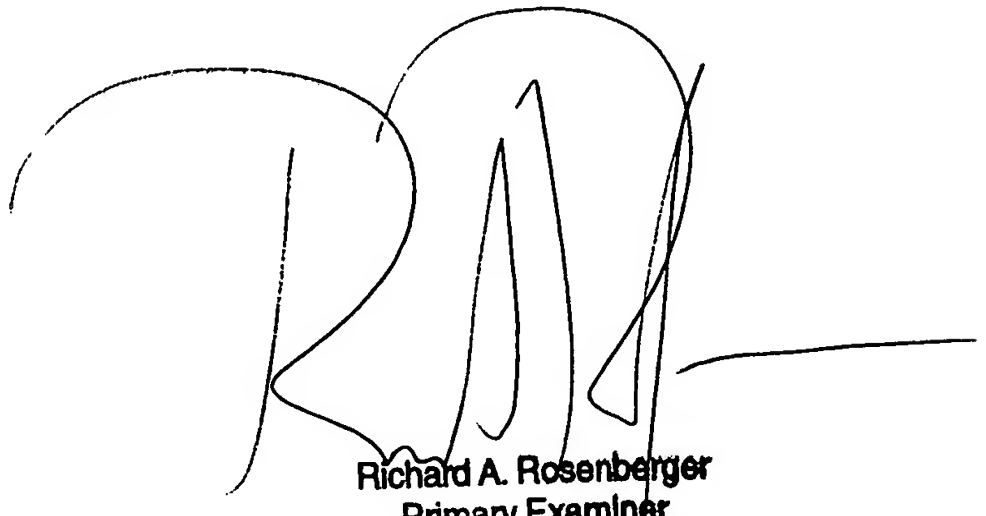


**CONCLUSION**

8. Applicant's Claim 35 is rejected based on the reasons set forth above.
9. Applicant has previously canceled Claims 1-34.
10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
11. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.
12. Any inquiries concerning this communication from the Examiner should be directed to Vincent P. Barth, whose telephone number is 571-272-2410, and who may be ordinarily reached from 9:00 a.m. to 5:30 p.m., Monday through Friday. The fax number for the group before final actions is 703-872-9306.
13. If attempts to reach the Examiner prove unsuccessful, the Examiner's supervisor is Gregory J. Toatley, Jr., who may be reached at 571-272-2800, ext. 77.
14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

Art Unit: 2877

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard A. Rosenberger  
Primary Examiner